IN THE CLAIMS:

CLAIMS

1. (currently amended) A method for establishing a label switched path across multiple autonomous systems without the use of a multi-label stack, wherein each one of the multiple autonomous systems includes at least one border router and a plurality of interior routers, the method comprising:

storing, in a memory at a border router coupling a first autonomous system to a second autonomous system, a mapping of a first label associated with a last hop forwarding equivalency class (FEC) of the first autonomous system to a second label associated with a first hop in the second autonomous system, the second label associated with the last hop FEC of the first autonomous system ;

receiving from an interior router in said first autonomous system a protocol message including a single label stack comprised of said first label;

replacing said first label in the single label stack with said second label in said protocol message ; and

forwarding said single label stack protocol message to a downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

2. (currently amended) The method of claim 1, comprising:

establishing an incoming label switched path over said first autonomous system;

associating said first label with said incoming label switched path;

establishing an outgoing label switched path over said second autonomous system;

learning said second label associated with said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

3. (original) The method of claim 2, wherein establishing said outgoing label switched path over said second autonomous system comprises:

using a Label Distribution Protocol to set up said outgoing label switched path to a downstream neighboring border device.

4. (currently amended) The method of claim 2, wherein learning said second label associated with said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system comprises:

establishing a Label Distribution Protocol session with said downstream neighboring (next hop) ~~device~~ interior router; and

receiving said second label associated with said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system via said Label Distribution Protocol session.

5. (previously presented) The method of claim 2, wherein mapping said first label from said first autonomous system to said second label in said second autonomous system comprises:

maintaining a label information base at; and

creating in said label information base a label information base entry mapping said first label from said first autonomous system to said second label in said second autonomous system.

6. (currently amended) A border router device for establishing a label switched path across multiple autonomous systems without the use of a multi-label stack, wherein each autonomous system of the multiple autonomous systems includes at least one border router and a plurality of interior routers, the device comprising:

mapping logic operably coupled to map a first label associated with a last hop forwarding equivalency class (FEC) of a first autonomous system to a second label associated with a first hop in a second autonomous system , the second label associated with the last hop FEC of the first autonomous system;

receiving logic operably coupled to receive from an interior router in said first autonomous system a protocol message including a single label stack comprising said first label;

replacing logic responsive to the receiving logic and operably coupled to replace said first label in the single label stack with said second label in said protocol message; and

forwarding logic responsive to the replacing logic and operably coupled to forward said single label protocol message to a downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

7. (currently amended) The device of claim 6, comprising:

first label switched path establishing logic operably coupled to establish an incoming label switched path over said first autonomous system and associate said first label with said incoming label switched path;

second label switched path establishing logic responsive to said first label switched path establishing logic and operably coupled to establish an outgoing label switched path over said second autonomous system;

label distribution logic operably coupled to obtain said second label from said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system;

mapping logic operably coupled to map said first label from said interior router of said first autonomous system to said second label in said second autonomous system;

receiving logic operably coupled to receive from said first autonomous system said protocol message including said first label;

replacing logic responsive to said receiving logic and operably coupled to forward said protocol message to said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

8. (original) The device of claim 7, wherein said second label switched path establishing logic comprises Label Distribution Protocol logic.

9. (currently amended) The device of claim 7, wherein said label distribution logic comprises Label Distribution Protocol logic operably coupled to establish a Label Distribution Protocol session with said downstream neighboring (next hop) ~~device~~ interior router and receive said second label associated with said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system via said Label Distribution Protocol session.

10. (original) The device of claim 7, further comprising a label information base, wherein said mapping logic is operably coupled to create in said label information base a label information base entry mapping said first label from said first autonomous system to said second label in said second autonomous system.

11. (currently amended) A program product for use at a border router comprising a computer readable medium having embodied therein a computer program for establishing a label switched path across multiple autonomous systems without the use of a multi-label stack, wherein each of the multiple autonomous systems comprises at least one border router and a plurality of interior routers, the computer program comprising:

mapping logic programmed to map a first label associated with a last hop forwarding equivalency class (FEC) of a first autonomous system to a second label associated with a first hop in a second autonomous system , the second label associated with the last hop FEC of the first autonomous system;

receiving logic programmed to receive from an interior router of said first autonomous system a protocol message including a single label stack comprising said first label;

replacing logic responsive to the receiving logic and programmed to replace said first label in the single label stack with said second label in said protocol message; and

forwarding logic responsive to the replacing logic and programmed to forward said single label stack protocol message to a downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

12. (currently amended) The program product of claim 11 comprising:

first label switched path establishing logic programmed to establish an incoming label switched path over said first autonomous system and associate said first label with said incoming label switched path;

second label switched path establishing logic responsive to said first label switched path establishing logic and programmed to establish an outgoing label switched path over said second autonomous system;

label distribution logic programmed to obtain said second label from said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system;

mapping logic programmed to map said first label from said first autonomous system to said second label in said second autonomous system;

receiving logic programmed to receive from said interior router in said first autonomous system said protocol message including said first label;

replacing logic response to said receiving logic and programmed to replace said first label with said second label in said protocol message; and

forwarding logic responsive to said replacing logic and programmed to forward said protocol message to said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system.

13. (original) The program product of claim 12, wherein said second label switched path establishing logic comprises Label Distribution Protocol logic.

14. (currently amended) The program product of claim 12, wherein said label distribution logic comprises Label Distribution Protocol logic programmed to establish a Label Distribution Protocol session with said downstream neighboring (next hop) ~~device~~ interior router and receive said second label associated with said downstream neighboring (next hop) ~~device~~ interior router in said second autonomous system via said Label Distribution Protocol session.

15. (original) The program product of claim 12, wherein said mapping logic is programmed to maintain a label information base and to create in said label information base a label information base entry mapping said first label from said first autonomous system to said second label in said second autonomous system.

16. (cancelled)

17. (cancelled)